Analytical Laboratory

13339 Hagers Ferry Road
Huntersville, NC 28078-7929
McGuire Nuclear Complex - MG03A2
Phone: 980-875-5245 Fax: 980-875-4349

Order Summary Report

Order Number: **J13070052**

Project Name:

Customer Name(s): NATHAN CRAIG/ JOSH QUINN

Customer Address: 8320 NC Hwy 150 East
Mail Code: Marshall Steam Station
Terrell, NC 28682

Lab Contact: Jason C Perkins Phone: 980-875-5348

Report Authorized By: (Signature) Therona James 2013.08.13 15:34:54 -04'00' **Date:** 8/13/2013

Jason C Perkins

Program Comments:

Please contact the Program Manager (Jason C Perkins) with any questions regarding this report.

Data Flags & Calculations:

Any analytical tests or individual analytes within a test flagged with a Qualifier indicate a deviation from the method quality system or quality control requirement. The qualifier description is found at the end of the Certificate of Analysis (sample results) under the qualifiers heading. All results are reported on a dry weight basis unless otherwise noted. Subcontracted data included on the Duke Certificate of Analysis is to be used as information only. Certified vendor results can be found in the subcontracted lab final report. Duke Energy Analytical Laboratory subcontracts analyses to other vendor laboratories that have been qualified by Duke Energy to perform these analyses except where noted.

Data Package:

This data package includes analytical results that are applicable only to the samples described in this narrative. An estimation of the uncertainty of measurement for the results in the report is available upon request. This report shall not be reproduced, except in full, without the written consent of the Analytical Laboratory. Please contact the Analytical laboratory with any questions. The order of individual sections within this report is as follows:

Job Summary Report, Sample Identification, Technical Validation of Data Package, Analytical Laboratory Certificate of Analysis, Analytical Laboratory QC Reports, Sub-contracted Laboratory Results, Customer Specific Data Sheets, Reports & Documentation, Customer Database Entries, Test Case Narratives, Chain of Custody (COC)

Certification:

The Analytical Laboratory holds the following State Certifications : North Carolina (DENR) Certificate #248, South Carolina (DHEC) Laboratory ID # 99005. Contact the Analytical Laboratory for definitive information about the certification status of specific methods.

Sample ID's & Descriptions:

Sample ID	Plant/Station	Collection Date and Time	Collected By	Sample Description
2013015272	MARSHALL	01-Jul-13 8:55 AM	illegible	BOTTOM ASH SLUICE
2013015273	MARSHALL	01-Jul-13 9:12 AM	G.LONG	SERVICE/INTAKE WATER
2013015274	MARSHALL	01-Jul-13 8:50 AM	G.LONG	ASH BASIN
2013015275	MARSHALL	01-Jul-13 8:13 AM	G.LONG	BLANK

4 Total Samples

Technical Validation Review

Checklist:

COC and .pdf report are in agreement with sample totals and analyses (compliance programs and procedures).	☑ Yes	☐ No
All Results are less than the laboratory reporting limits.	☐ Yes	☑ No
All laboratory QA/QC requirements are acceptable.	☑ Yes	☐ No

Report Sections Included:

- ☑ Job Summary Report
- ☑ Sample Identification
- ☑ Technical Validation of Data Package
- ☑ Analytical Laboratory Certificate of Analysis
- ☐ Analytical Laboratory QC Report
- ☑ Sub-contracted Laboratory Results
- ☐ Customer Specific Data Sheets, Reports, & Documentation
- ☐ Customer Database Entries
- ☑ Chain of Custody
- ☑ Electronic Data Deliverable (EDD) Sent Separately

Reviewed By: Therona T James Date: 8/13/2013

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J13070052

Site: BOTTOM ASH SLUICE **Sample #: 2013015272**

Collection Date: 01-Jul-13 8:55 AM Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
OIL AND GREASE IN WATER - SOLID PHASE EXTRACTION								
Oil and Grease	**< 5**	mg/L		5	1	EPA 1664B	07/10/2013 07:15	TJA7067
BIOCHEMICAL OXYGEN DEMAND (BOD) - (Analysis Performed by Prism Labs)								
Vendor Parameter	**Complete**					Vendor Method		V_PRISM
AMMONIA (COLORIMETRIC)								
Ammonia (Colorimetric)	**0.054**	mg-N/L		0.02	1	EPA 350.1	07/08/2013 11:49	BGN9034
NITRITE + NITRATE (COLORIMETRIC)								
Nitrite + Nitrate (Colorimetric)	**0.318**	mg-N/L		0.01	1	EPA 353.2	07/08/2013 11:05	BGN9034
TOTAL KJELDAHL NITROGEN (COLORIMETRIC)								
Total Kjeldahl Nitrogen (Colorimetric)	**< 0.15**	mg-N/L		0.15	1	EPA 351.2	07/10/2013 13:59	TLINN
TOTAL PHOSPHORUS (COLORIMETRIC)								
Total Phosphorus (Colorimetric)	**0.047**	mg-P/L		0.005	1	EPA 365.1	07/09/2013 08:41	BGN9034
INORGANIC IONS BY IC								
Chloride	**6.6**	mg/L		0.1	1	EPA 300.0	07/09/2013 17:03	JAHERMA
Sulfate	**14**	mg/L		1	10	EPA 300.0	07/09/2013 17:03	JAHERMA
TOTAL RECOVERABLE METALS BY ICP								
Aluminum (Al)	**1.23**	mg/L		0.05	10	EPA 200.7	07/12/2013 14:24	DJSULL1
Magnesium (Mg)	**2.19**	mg/L		0.05	10	EPA 200.7	07/12/2013 14:24	DJSULL1
Silicon (Si)	**5.94**	mg/L		0.1	10	EPA 200.7	07/12/2013 14:24	DJSULL1
TOTAL RECOVERABLE METALS BY ICP-MS								
Thallium (Tl)	**< 1**	ug/L		1	1	EPA 200.8	07/17/2013 11:06	DJSULL1
Vanadium (V)	**6.42**	ug/L		1	1	EPA 200.8	07/17/2013 11:06	DJSULL1
Miscellaneous Tests by a Vendor Laboratory - (Analysis Performed by Element One)								
Vendor Parameter	**Complete**					Vendor Method		V_ELE1
SULFIDE - (Analysis Performed by Element One)								
Vendor Parameter	**Complete**					Vendor Method		V_ELE1
TOTAL DISSOLVED SOLIDS								
TDS	**66**	mg/L		25	1	SM2540C	07/02/2013 14:14	SWILLI3

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J13070052

Site: SERVICE/INTAKE WATER
Collection Date: 01-Jul-13 9:12 AM

Sample #: 2013015273
Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
OIL AND GREASE IN WATER - SOLID PHASE EXTRACTION								
Oil and Grease	**< 5**	mg/L		5	1	EPA 1664B	07/10/2013 07:15	TJA7067
BIOCHEMICAL OXYGEN DEMAND (BOD) - (Analysis Performed by Prism Labs)								
Vendor Parameter	**Complete**					Vendor Method		V_PRISM
AMMONIA (COLORIMETRIC)								
Ammonia (Colorimetric)	**0.046**	mg-N/L		0.02	1	EPA 350.1	07/08/2013 11:52	BGN9034
NITRITE + NITRATE (COLORIMETRIC)								
Nitrite + Nitrate (Colorimetric)	**0.148**	mg-N/L		0.01	1	EPA 353.2	07/08/2013 11:07	BGN9034
TOTAL KJELDAHL NITROGEN (COLORIMETRIC)								
Total Kjeldahl Nitrogen (Colorimetric)	**0.19**	mg-N/L		0.15	1	EPA 351.2	07/10/2013 14:00	TLINN
TOTAL PHOSPHORUS (COLORIMETRIC)								
Total Phosphorus (Colorimetric)	**0.018**	mg-P/L		0.005	1	EPA 365.1	07/09/2013 08:38	BGN9034
INORGANIC IONS BY IC								
Chloride	**27**	mg/L		1	10	EPA 300.0	07/09/2013 16:44	JAHERMA
Sulfate	**17**	mg/L		1	10	EPA 300.0	07/09/2013 16:44	JAHERMA
TOTAL RECOVERABLE METALS BY ICP								
Aluminum (Al)	**0.373**	mg/L		0.005	1	EPA 200.7	07/12/2013 14:20	DJSULL1
Magnesium (Mg)	**6.88**	mg/L		0.005	1	EPA 200.7	07/12/2013 14:20	DJSULL1
Silicon (Si)	**4.17**	mg/L		0.01	1	EPA 200.7	07/12/2013 14:20	DJSULL1
TOTAL RECOVERABLE METALS BY ICP-MS								
Thallium (Tl)	**< 1**	ug/L		1	1	EPA 200.8	07/17/2013 11:03	DJSULL1
Vanadium (V)	**1.53**	ug/L		1	1	EPA 200.8	07/17/2013 11:03	DJSULL1
Miscellaneous Tests by a Vendor Laboratory - (Analysis Performed by Element One)								
Vendor Parameter	**Complete**					Vendor Method		V_ELE1
SULFIDE - (Analysis Performed by Element One)								
Vendor Parameter	**Complete**					Vendor Method		V_ELE1
TOTAL DISSOLVED SOLIDS								
TDS	**150**	mg/L		25	1	SM2540C	07/02/2013 14:14	SWILLI3

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J13070052

Site: ASH BASIN **Sample #: 2013015274**
Collection Date: 01-Jul-13 8:50 AM Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
SULFIDE - (Analysis Performed by Element One)								
Vendor Parameter	**Complete**					Vendor Method		V_ELE1

Site: BLANK **Sample #: 2013015275**
Collection Date: 01-Jul-13 8:13 AM Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	DF	Method	Analysis Date/Time	Analyst
TOTAL RECOVERABLE METALS BY ICP								
Aluminum (Al)	**< 0.005**	mg/L		0.005	1	EPA 200.7	07/12/2013 14:16	DJSULL1
Magnesium (Mg)	**< 0.005**	mg/L		0.005	1	EPA 200.7	07/12/2013 14:16	DJSULL1
Silicon (Si)	**0.010**	mg/L	B	0.01	1	EPA 200.7	07/12/2013 14:16	DJSULL1
TOTAL RECOVERABLE METALS BY ICP-MS								
Thallium (Tl)	**< 1**	ug/L		1	1	EPA 200.8	07/17/2013 10:59	DJSULL1
Vanadium (V)	**< 1**	ug/L		1	1	EPA 200.8	07/17/2013 10:59	DJSULL1

Qualifiers:

B Target analyte detected in method blank at or above the reporting limit. Target analyte concentration in sample is less than 10X the concentration in the method blank. Analyte concentration in sample could be due to contamination.

Element One Inc.
6319-D Carolina Beach Rd.
Wilmington, NC 28412

Phone: 910 793-0128
Fax: 910 792-6853
e1lab@e1lab.com

elementOne

REPORT OF ANALYSES

Duke Energy
Laboratory Services
13339 Hagers Ferry Road Bld. MG03A
Huntersville, NC 28078

July 8, 2013
Client Project Name MSS Bottom Ash Sluice
Client Project Number J13070052
PO Number

Sample Matrix	Other			Date Received	07/03/13
Date Analyzed	07/05/13	Method	SM 4500 S^{2-} D	Time Received	1235
Delivered by	FedEx			Received by	KLS

eOne ID	Duke Energy ID	Parameter	Result	Unit	Dil	DL	Date Sampled	Time Sampled
20729-1	Bottom Ash Sluice 0.3m	Sulfide	< 0.05	mg/L	1	0.05	07/01/13	0855
20729-2	Service/Intake Water 0.3m	Sulfide	< 0.05	mg/L	1	0.05	07/01/13	0912
20729-3	Ash Basin 0.3m	Sulfide	< 0.05	mg/L	1	0.05	07/01/13	0850

Ken Smith, Laboratory Director

20729 Duke Report Packet Compiled by DBL /KLS

NC Certifications: DW 37788 and DWQ DENR 604

Element One Inc.
6319-D Carolina Beach Rd.
Wilmington, NC 28412

Phone: 910 793-0128
Fax: 910 792-6853
e1lab@e1lab.com

elementOne

REPORT OF ANALYSES

Duke Energy
Laboratory Services
13339 Hagers Ferry Road Bld. MG03A
Huntersville, NC 28078

July 8, 2013
Client Project Name MSS Bottom Ash Sluice
Client Project Number J13070052
PO Number

Sample Matrix	Other			Date Received	07/03/13
Date Analyzed	07/05/13	Method	EPA 300.0	Time Received	1235
Delivered by	FedEx			Received by	KLS

eOne ID	Duke Energy ID	Parameter	Result	Unit	Dil	DL	Date Sampled	Time Sampled
20729-4	Bottom Ash Sluice 0.3m	Sulfite	< 0.1	mg/L	1	0.1	07/01/13	0855
20729-5	Service/Intake Water 0.3m	Sulfite	< 0.1	mg/L	1	0.1	07/01/13	0912

Ken Smith, Laboratory Director

20729 Duke Report Packet Compiled by DBL 7/8/13

NC Certifications: DW 37788 and DWQ DENR 604

e20729

Duke Energy
Analytical Laboratory
Chain of Custody & Sample Log

Duke Energy Analytical Laboratory
Mail Code MG03A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-5038

Analytical Laboratory Use Only

Order # J1307Q052 | Matrix OTHER | Samples Originating From NC___ SC___
Logged By [illegible] | Date & Time 7/1/13 1307 | SAMPLE PROGRAM: Ground Water ___ NPDES ___ Drinking Water ___ UST ___ RCRA Waste ___
Shipped Via: | Cooler Temp (C) 0.5

Page 1 of 1
DISTRIBUTION
ORIGINAL to LAB, COPY to CLIENT

COC REV DATE 6/27/2013

Project Name: MSS Bottom Ash Sluice | Phone No: 980-875-5963
Client: Josh Quinn/ Nathan Craig | Fax No: 980-875-4349
Business Unit: 20035 | Process: BENVWT | Resp. Center To: FOPR
Project ID: | Activity ID: | Mail Code: MG03A3
Waterbody: MSS Bottom Sluice | Station: Marshall

Element One
PO#145772

PRISM
PO#144725

Filtration (0.45 um)	⇩ Filtered ⇩			⇩ Unfiltered ⇩									
Preservative		H_2SO_4 Ice		H_2SO_4 Ice	Ice	Ice	Ice	HNO_3	NaOH Zn acetate Ice	H_2SO_4 Ice		Ice	
Container Volume (mL)		250		1,000	1000	300	500	500	250	250		300	
Container Type		HDPE		Glass	PET	PET	PET	HDPE	HDPE	HDPE		PET	

LAB USE ONLY Lab ID	Sample Description or ID: Location	Depth	Collection Information: Date	Time	Signature	Comp.	Grab	NH_3, NO_3-NO_2	O&G	BOD 5 (Prism)	Cl, SO_4	TDS	Al, Mn, Si, Ti, V **	Sulfide ** Element 1	TKN, TP		SO_3 Element 1		Total # Containers
201301527 2	Bottom Ash Sluice	0.3m	7/1/13	0855		X	*	1	1 *	1	1	1	1	1 *	1		1		9
201301527 3	Service/ Intake Water	0.3m	7/1/13	0912			X	1	1	1	1	1	1	1	1		1		9
201301527 4	Ash Basin	0.3m	7/1/13	0850			X							1					1
201301527 5	Blank		7/1/13	0813									1						1
																			0
																			0
																			0
																			0
																			0
																			0
																			0
																			0
																			0
																			0
																			0
					TOTAL			2	1	2	2	2	3	2		0	2	0	16

Customer to complete appropriate columns to right
Customer to complete all appropriate non-shaded areas.
Customer to sign & date below

PRISM
PO#144725

Relinquished By: [signature] Date/Time: 7-1-13 1300
Accepted By: [signature] Date/Time: 7/1/13 1300
Relinquished By: Date/Time:
Accepted By: Date/Time:
Relinquished By: [signature] Date/Time: 7/2/13 1300
Accepted By: [signature] Date/Time: 7/3/13 1235
Seal/Locked By: [signature] Date/Time: 7/2/13 1300
Sealed/Lock Opened By: [signature] Date/Time: 7/3/13 1235

Comments: ** Total Sulfide by: SM 4500-S2-D
METALS by TRM/ICP_MS: Ti, V
METALS by TRM/ICP: Al, Mn, Si

Customer, important: please indicate desired turnaround

Requested Turnaround
*14 Days ___
7 Days ___
* 48 Hr ___
*Other 7-14-13
* Add. Cost Will Apply

Total 20

3 of 7

elementOne

SAMPLE SUBMISSION FORM

Lab ID 20729

Report DUE 07.12.13

Analysis Due Date 07.10.13
QA/QC/Report Due Date 07.11.13

Client:	Duke Energy
LIMS No	J13070052
Project ID	MSS Bottom Ash Sluice

Date Rec:	07.03.13
Time Rec:	1235
Rec By	KLS

Ref. Method:

Sample Identification

1	Bottom Ash Sluice	0.3m	4	Bottom Ash Sluice	0.3m
2	Service/Intake Water	0.3m	5	Service/Intake Water	0.3m
3	Ash Basin	0.3m			

Analyses Requested	Samples 1-3	Sulfide
	Samples 4-5	SO3
	NOTE:	Duplicate and Spike per method requirements

The MS/MSD spike should approximate 2 to 3 times the sample concentration. If no sulfide detected at 100 µg/L spike the sample to render the final spike concentration at ~ 500 µg/L

Lab Communications

SS Page 1 of 1
SS by KLS
7/3/2013 12:41:33 PM

Prep By / Date 7.5.13 AOS
Labeled By / Date KLS 7/3/13
ID Verification By /Date 7.5.13 AOS

e1 ID: 20729
Client: Duke
Date: 07.05.13
IC Data: 070313-20729
Analyst: KLS

Sample ID	SO3 Conc.	Dilution	PPM	Recovery RPD
0	0.000	1		
0.1	0.083	1		
1	1.019	1		
5	4.983	1		
10	10.007	1		
QC	4.632	1	4.63	93%
Blank	0.000	1	0.00	
DL	0.090	1	0.09	90%
LRB	0.000	1	0.00	
LRB SPK	4.781	1	4.78	96%
20729-4	0.000	1	< 0.1	
20729-4 spk	0.000	1	< 0.1	0%
20729-5	0.000	1	< 0.1	
20729-5 dup	0.000	1	< 0.1	NA
20729-4	0.000	10	< 0.01	
20729-4 spk	5.243	10	52.4	105%
QC	5.234	1	5.23	105%
Blank	0.000	1	0.00	

Correlation: 0.99999
Spike was analyzed @ 10X dilution due to matrix interference.

elementOne

IC Sample Sheet/Digestion Worksheet

Lab ID #: 20729

Date: 7.3.13
Analyst: KLS / JWL
Batch name: 070313-20729

Column: Metrosep A Supp 5
Eluent: 3.2 mM Na_2CO_3/ 1.0mM $NaHCO_3$
Flow Rate: .7 mL/min.

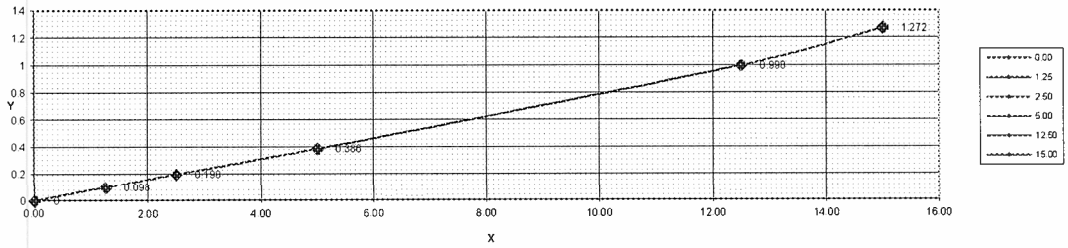
Method: 300.0 SO3

AS LOC.	Sample ID	Client	Analyte	Results (ug/mL)	Results (ug/mL)	Dilution	Wt (g) / FV (mL)
	0.0		Cl		—		
	0.1	SO3	.99999		0.083		
	1.0				1.019		
	5.0				4.983		
	10.0				10.007		
	QC				4.632		
	BLK				—		
	DL				0.090		
	LRB				—		
	LRB+				4.781		
	QC						
	BLK						
	DL (KLS 7.5.13)						
	LRB						
	LRB+						
	20729-4	Duke	SO3		—	1x	
	-4spk	↓	↓		—	↓	
	-5				—		
	-5dup				—		
	QC				4.514		
	BLK				—		
	20729-4	Duke	SO3		—	10x	
	-4spk	↓	↓		5.243	↓	
	QC				5.234		
	BLK				—		

Curve IC Lot # IC2-118-1 Comments: 1 of 1
Spike 50 uL from 1000 ug/mL Std. to 10mL sample Lot #'s: ~~IC-ME Solution~~ SO3 Cal IC2-117-3 ~~IC NO2 Solution~~ SO3 QC IC2-117-4
Submitted for QC- Date:_____ Time:_____ By:_____ QC Review- Date:_____ Time:_____ By:_____
Re-Test Required- No_____ Yes_____ Comments:_____
Re-Submitted for QC- Date:_____ Time:_____ By:_____ QC Review- Date:_____ Time:_____ By:_____

METHOD :	SM 4500 S2- D	ELEMENT ONE		
ELEMENT ASSAY :	Sulfide	Spectrophotometer	UNITS OF ANSWER	ug/mL
		Wave Length	DETECTION LIMIT (ug)	1.250
CLIENT:	Duke		SPK LEVEL (ug)	5
Lab ID#	20729	664	MAX ALIQUOT	25.00
Date:	~~6-20-13~~ 7-5-13		STANDARD conc(ug)	X
Time Analysis Begun	16:05			5
Time Analysis Ended	16:35			
Analyst:	ADJ		STD ABSORPTION	Y

X	Y
ug STD SOLUTION	STD ABS
0.00	0
1.25	0.098
2.50	0.198
5.00	0.386
12.50	0.998
15.00	1.272



					Slope	0.083394306	Correlation	0.999010679
SAMPLE I.D.	SAMP ABS	ug PER ALIQUOT	mL ALIQUOT	F.VOL. X DILUTION	WEIGHT in g.	RESULTS ug/mL	% RPD % SPK REC	SPIKE LEVEL
LRB	0	0.00	25	1	1	<		
LRB SPK 1	0.392	4.85	25	1	1	0.194	97%	5.0
LRB SPK 2	1.02	12.30	25	1	1	0.492	98%	12.5
QC	0.386	4.78	25	1	1	0.191	96%	5.0
20729-1	0.002	0.23	25	1	1	<		
20729-1 dup	0.001	0.22	25	1	1	<	N/A	
20729-2	0.000	0.00	25	1	1	<		
20729-2 spk	0.388	4.81	10	1	1	0.481	96%	5.0
20729-2 spk	1.01	12.19	10	1	1	1.22	97%	12.5
20729-3	0.002	0.23	1	1	1	<		
BLK	0	0.000	25	1	1	<		
QC	0.386	4.784	25	1	1	0.191	96%	5.0

As per clients request: no sulfide is present in sample a 500ppm/12.5ug spike concentration was rendered.

Case Narrative

07/11/2013

PRISM LABORATORIES, INC. | Full-Service Analytical & Environmental Solutions

NC Certification No. 402
SC Certification No. 99012
NC Drinking Water Cert No. 37735
VA Certification No. 460211
DoD ELAP: L-A-B Accredited Certificate No. L2307
ISO/IEC 17025: L-A-B Accredited Certificate No. L2307

Duke Energy Corporation
Jay Perkins
13339 Hagers Ferry Road
Huntersville, NC 28078

Project: MSS Bottom Ash Sluice
Project No.: J13070052
Lab Submittal Date: 07/01/2013
Prism Work Order: 3070008

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

PRISM LABORATORIES, INC.

Angela D. Overcash

VP Laboratory Services

Reviewed By Robbi A. Jones For Angela D. Overcash

President/Project Manager

Data Qualifiers Key Reference:

D	RPD value outside of the control limits.
BRL	Below Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
*	Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

PRISM LABORATORIES, INC. Full-Service Analytical & Environmental Solutions

Sample Receipt Summary

07/11/2013

Prism Work Order: 3070008

Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
2013015272/Bottom Ash Sluice 0.3m	3070008-01	Water	07/01/13	07/01/13
2013015273/Service/ Intake Water 0.3m	3070008-02	Water	07/01/13	07/01/13

Samples received in good condition at 5.0 degrees C unless otherwise noted.

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

PRISM LABORATORIES, INC. Full-Service Analytical & Environmental Solutions

Laboratory Report

07/11/2013

Duke Energy Corporation
Attn: Jay Perkins
13339 Hagers Ferry Road
Huntersville, NC 28078

Project: MSS Bottom Ash Sluice

Project No.: J13070052
Sample Matrix: Water

Client Sample ID: 2013015272/Bottom Ash Sluice
Prism Sample ID: 3070008-01
Prism Work Order: 3070008
Time Collected: 07/01/13 08:55
Time Submitted: 07/01/13 15:55

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
Biochemical Oxygen Demand	BRL	mg/L	2.0		1	*SM5210 B	7/3/13 8:55	MES	P3G0133

449 Springbrook Road - P.O. Box 240543 - Charlotte, NC 28224-0543
Phone: 704/529-6364 - Toll Free Number: 1-800/529-6364 - Fax: 704/525-0409

PRISM LABORATORIES, INC. Full-Service Analytical & Environmental Solutions

Laboratory Report

07/11/2013

Duke Energy Corporation
Attn: Jay Perkins
13339 Hagers Ferry Road
Huntersville, NC 28078

Project: MSS Bottom Ash Sluice

Project No.: J13070052
Sample Matrix: Water

Client Sample ID: 2013015273/Service/ Intake Wate
Prism Sample ID: 3070008-02
Prism Work Order: 3070008
Time Collected: 07/01/13 09:12
Time Submitted: 07/01/13 15:55

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
Biochemical Oxygen Demand	**2.3**	**mg/L**	**2.0**		**1**	***SM5210 B**	**7/3/13 9:10**	**MES**	**P3G0133**

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PRISM LABORATORIES, INC. Full-Service Analytical & Environmental Solutions

Level II QC Report

7/11/13

Duke Energy Corporation
Attn: Jay Perkins
13339 Hagers Ferry Road
Huntersville, NC 28078

Project: MSS Bottom Ash Sluice

Project No: J13070052

Prism Work Order: 3070008
Time Submitted: 7/1/2013 3:55:00PM

General Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3G0133 - NO PREP										
Blank (P3G0133-BLK1)				Prepared & Analyzed: 07/03/13						
Biochemical Oxygen Demand	BRL	2.0	mg/L							
LCS (P3G0133-BS1)				Prepared & Analyzed: 07/03/13						
Biochemical Oxygen Demand	178	2.0	mg/L	198.0		90	85-115			
Duplicate (P3G0133-DUP1)	**Source: 3070008-02**			Prepared & Analyzed: 07/03/13						
Biochemical Oxygen Demand	3.60	2.0	mg/L		2.30			44	30	D

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CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Duke Energy
Analytical Laboratory
Chain of Custody & Sample Log

Duke Energy Analytical Laboratory
Mail Code MG03A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-5938

Analytical Laboratory Use Only

Order # J13070052 | Matrix OTHER | Samples Originating From NC___ SC___
Logged By LH | Date & Time 7/1/13 1307 | SAMPLE PROGRAM: Ground Water ___ NPDES ___ Drinking Water ___ UST ___ RCRA Waste ___
Cooler Temp (C) 0.5

Page _1__ of __1_
DISTRIBUTION
ORIGINAL to LAB, COPY to CLIENT

COC REV DATE 6/27/2013

Customer Must Complete

Project Name	MSS Bottom Ash Sluice		Phone No: 980-875-5962
Client	Josh Quinn/ Nathan Craig		Fax No: 980-875-4349
Business Unit:	20035	Process: BENVWT	Resp. Center To: FOPR
Project ID:		Activity ID:	Mail Code: MG03A3
Waterbody:	MSS Bottom Sluice	Station: Marshall	

Element One
PO#145772

PRISM
PO#144725

Filtration (0.45 um)	⇩ Filtered ⇩		⇩ Unfiltered ⇩										
Preservative		H_2SO_4 Ice		H_2SO_4 Ice	Ice	Ice	Ice	HNO_3	NaOH Zn acetate Ice	H_2SO_4 Ice		Ice	
tainer Volume (mL)		250		1,000	1000	300	500	500	250	250		300	
Container Type		HDPE		Glass	PET	PET	PET	HDPE	HDPE	HDPE		PET	

LAB USE ONLY Lab ID	Sample Description or ID: Location	Depth	Collection Information: Date	Time	Signature	Comp.	Grab	NH3, NO3-NO2		O&G	Sub-Contract	Cl, SO4	TDS	Al, Mn, Si, Ti, V **	Sulfide ** Element 1	TKN, TP		SO3 Element 1		Total # Containers	
20130152772	Bottom Ash Sluice	0.3m	7/1/13	0855		X	*	1		1 *	1	1	1	1	1 *	1		1		9	#1
20130152773	Service/ Intake Water	0.3m	7/1/13	0912			X	1		1	1	1	1	1	1	1		1		9	#2
20130152774	Ash Basin	0.3m	7/1/13	0850			X								1					1	
20130152775	Blank		7/1/13	0813										1						1	
											BDL									0	
																				0	
																				0	
																				0	
																				0	
																				0	
																				0	
																				0	
																				0	
																				0	
																				0	
																				0	
					TOTAL			2		1	2	2	2	3	2		0	2	0	16	

Customer to complete all appropriate non-shaded areas.
Customer to complete appropriate columns to right.

Relinquished By	Date/Time	Accepted By:	Date/Time
	7-1-13 1300		7/1/13 1300
Relinquished By	Date/Time	Accepted By:	Date/Time
	7-1-13 1515		7/1/13 1515
Relinquished By	Date/Time	Accepted By:	Date/Time
	7/2/13 1300		
Seal/Locked By	Date/Time	Sealed/Lock Opened By	Date/Time
	7/2/13 1300		

Comments: Total Sulfide by: SM 4500-S²⁻E
METALS by TRM/ICP: Al, Mn, Si, Ti, V
METALS by TRM/ICP: Al, Mn, Si 7/1/13 15:55 7-1-13 @ 1555

Customer must sign & date below

Requested Turnaround
*14 Days ___
7 Days ___
7-11-13
* 48 Hr ___
*Other ___
* Add. Cost Will Apply

Total 20

5.6°
5.0°C

3470498

Duke Energy Analytical Laboratory
Chain of Custody & Sample Log

Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-5038

Analytical Laboratory Use Only
Order # J13070052 | Matrix: OTHER | Samples Originating From: NC___ SC___
Logged By: LLD | Date & Time: 7/1/13 1307
SAMPLE PROGRAM: Ground Water ___ Drinking Water ___ NPDES ___ UST ___ RCRA Waste ___
...t 1 | Cooler Temp (C): 0.5

Page _1_ of _1_
DISTRIBUTION
ORIGINAL to LAB, COPY to CLIENT

COC REV DATE 6/27/2013

Customer Must Complete

Project Name	MSS Bottom Ash Sluice
Phone No:	980-875-5963
Client	Josh Quinn/ Nathan Craig
Fax No:	980-875-4349
Business Unit:	20035
Process:	BENVWT
Resp. Center To:	FOPR
Project ID:	
Activity ID:	
Mail Code:	MG03A3
Waterbody:	MSS Bottom Sluice
Station:	Marshall

Element One
PO#145772

PRISM
PO#144725

Filtration (0.45 um)	Filtered		Unfiltered										
Preservative		H_2SO_4 Ice		H_2SO_4 Ice	Ice	Ice	Ice	HNO_3	NaOH Zn acetate Ice	H_2SO_4 Ice		Ice	
Container Volume (mL)		250		1,000	1000	300	500	500	250	250		300	
Container Type		HDPE		Glass	PET	PET	PET	HDPE	HDPE	HDPE		PET	

Customer to complete all appropriate non-shaded areas.

Customer to complete appropriate columns to right

LAB USE ONLY Lab ID	Location	Depth	Date	Time	Signature	Comp.	Grab		NH3, NO3-NO2		O&G	BOD 5 (Prism)	Cl, SO4	TDS	Al, Mn, Si, Ti, V **	Sulfide ** Element 1	TKN, TP		SO3 Element 1		Total # Containers
2013015272	Bottom Ash Sluice	0.3m	7/1/13	0855	[signature]	x	*		1		1 *	1	1	1	1	1 *	1		1		9
2013015273	Service/ Intake Water	0.3m	7/1/13	0912	[signature]		x		1		1	1	1	1	1	1	1		1		9
2013015274	Ash Basin	0.3m	7/1/13	0850	↓		x									1					1
2013015275	Blank		7/1/13	0813											1						1
																					0
																					0
																					0
																					0
																					0
																					0
																					0
																					0
																					0
																					0
																					0
																					0
					TOTAL				2		1	2	2	2	3	2		0	2	0	16

Customer to sign & date below

Relinquished By	Date/Time	Accepted By:	Date/Time
[signature]	7-1-13 1300	L. Davis	7/1/13 1300
Cindy Knox	7-1-13 1515	[signature]	7/1/13 15:15
L. Davis	7/2/13 1300		
Seal/Locked By	**Date/Time**	**Sealed/Lock Opened By**	**Date/Time**
L. Davis	7/2/13 1300		

Customer, important: please indicate desired turnaround

Requested Turnaround
*14 Days ______
7 Days ______ 7-11-13
* 48 Hr ______
*Other ______
* Add. Cost Will Apply

Total 20

Comments
** Total Sulfide by: SM 4500-S2-D
METALS by TRM/ICP_MS: Ti, V
METALS by TRM/ICP: Al, Mn, Si